NOVEMBER 25, 2011
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The Second Best Thing About Payday

nih record

ABOVE • *NINDS high school intern gets to meet the President. See story on p. 9.*

features

departments

A Stand for Science

At NIH, Secretary of State Clinton Charts Course to an 'AIDS-Free Generation'

By Carla Garnett

We have the power to eliminate a deadly pandemic that has plagued the world for the last 30 years. Working together, we can create an "AIDS-free generation." That's what Secretary of State Hillary Clinton announced at NIH on Nov. 8.

"AIDS is still an incurable disease, but it no longer has to be a death sentence," Clinton declared. "Today, thanks both to new knowledge and to new ways of applying it, we have the chance to give countless lives and futures to millions of people who are alive today, but equally—if not more importantly—to an entire generation yet to be born."

Secretary of State Hillary Clinton addresses a Masur Auditorium audience Nov. 8.

Her visit kicked off preparation for World AIDS Day activities on Dec. 1 and

SEE **CLINTON**, PAGE 6

Tissue Engineering Moves from Sci Fi to Reality, Mikos Shows

By Rich McManus

If you ever want to gain a fresh appreciation of how well made the human body is, try building replacement parts for missing or damaged elements of the original equipment. It will require all the biology, chemistry, physics and engineering you can marshal, and then some.

In a recent Wednesday Afternoon Lecture he titled "Biomaterials for Tissue Engineering," Dr. Antonios G. Mikos, professor in the department of bioengineering at Rice University, gave an overview of a "relatively young field" that has been around for only 20 years or so.

Dr. Antonios Mikos

"The promise of the field," however, "is no lon-

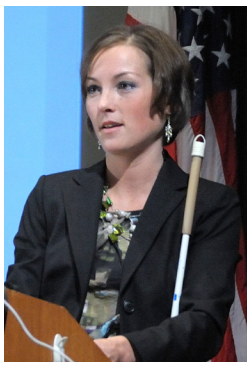
SEE **MIKOS**, PAGE 4

NIH Celebrates a Decade of Accessibility

By Erin Fults

This year marks the 10th anniversary of Section 508 compliance, which went into effect to ensure equal access to information and federal documents. NIH celebrated this decade of accessibility and National Disability Employment Awareness Month with its "More Than Words" program on Oct. 31.

Over 25 million Americans have trouble seeing, even with correction, or are blind and approximately 1 million can't hear within the range of conversation. "The public most in need of health information and web sites may have some disability that prevents them from getting the information and services they



CIT's Teresa Shea advocates for people with disabilities.

SEE **ACCESSIBILITY**, PAGE 8

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briefs

STEP Forum on Comparative Effectiveness Research, Dec. 8

The staff training in extramural programs (STEP) committee will present a Current Controversies in Medicine forum on the topic "Comparative Effectiveness Research: Choppy Waters or Smooth Sailing?" on Thursday, Dec. 8, from 9 to 11 a.m. in Rockledge II, Rm. 9112-9116.

The NIH search for what works best to improve patients' outcomes has evolved from best care strategy trials to comparative effectiveness research (CER). Conducting a CER trial is challenging due to the diversity of stakeholders, their complex relationships and the need for large multi-site clinical trials. Come and learn the benefits, obstacles and controversies as we explore the current state and future of CER.

Author Coleman To Give DDM Seminar

The Deputy Director for Management (DDM) announces the first DDM seminar of the 2011-2012 series "Management and Science: Partnering for Excellence." The event on Thursday, Dec. 15 from 11 a.m. to 12:30 p.m. in Masur Auditorium, Bldg. 10, will feature Harvey Coleman, author of the 10-module videotape and workbook program *A World of Diversity*. His presentation will focus on how to capitalize on the opportunities inherent in a diverse workforce.

Videocasting and sign language will be provided. Individuals who need other reasonable accommodation to attend should call (301) 496-6211 or the Federal Relay Service at 1-800-877-8339. For more information about the series, visit www.ddmseries.od.nih.gov or call (301) 496-3271.

FAES Announces Spring 2012 Courses

The FAES Graduate School at NIH announces the schedule of courses for the spring 2012 semester. The majority of the evening classes sponsored by the Foundation for Advanced Education in the Sciences will be given on the NIH campus.

Courses are offered in biochemistry, bioinformatics, biology, biotechnology (daytime courses), chemistry, immunology, languages, medicine, microbiology, pharmacology, statistics, technology transfer, alternative medicine, GRE and courses of general interest. Certificates in technology transfer and public health program are also being offered.

It is possible to transfer credits earned to other institutions for degree work, with their approval.

Classes will begin the week of Jan. 23. Online registration is now until Dec. 30 and mail registration ends Dec. 30. Walk-in registration will be held Jan. 9-18 and at an open house at the FAES Social and Academic Center on Jan. 4 from 4 to 7 p.m. Tuition is $145 per credit hour and courses may be taken for credit or audit. Courses that qualify for institute support as training should be cleared with supervisors and administrative officers as soon as possible. Both the vendor's copy of the training form (SF-182) and the FAES registration form must be submitted at the time of registration.

Spring supplements are available in the graduate school office in Bldg. 60, Suite 230, the Foundation Bookstore in Bldg. 10, Rm. B1L101 and the business office in Bldg. 10, Rm. B1C18. To have a supplement sent, call (301) 496-7976 or visit www.faes.org.

Chamber Singers Plan Holiday Concerts

The NIH Chamber Singers, an R&W-sponsored group of 15 singers, will present holiday concerts in December at several area locations. The program, titled "The Very Best Time of Year," will include both sacred and secular pieces, ranging from somber to celebratory.

The concerts will be performed at the following times and locations: Thursday, Dec. 8, noon, atrium of the Clinical Research Center; Saturday, Dec. 10, 3 p.m., Praisner Library, 14910 Old Columbia Pike, Burtonsville, Md.; Sunday, Dec. 11, 1:30 p.m., North Chevy Chase Christian Church, 8814 Kensington Parkway, Chevy Chase.

All concerts are free and open to the public. To request sign language interpretation or other reasonable accommodation, or to get more information, contact Valerie Lambros at (301) 594-7557 or Valerie.Lambros@nih.gov.

Conference on Prostate Cancer Surveillance

The National Cancer Institute, the Centers for Disease Control and Prevention and the NIH Office of Medical Applications of Research are sponsoring the upcoming State-of-the-Science Conference: Role of Active Surveillance in the Management of Men with Localized Prostate Cancer. It will be held Dec. 5-7 in Kirschstein Auditorium, Bldg. 45.

Tools that could reliably predict which tumors are likely to progress and which are unlikely to cause problems are not yet available. Currently, clinicians rely on two observational strategies as alternatives to immediate treatment of early-stage prostate cancer: watchful waiting and active surveillance. Yet, it is unclear which men will most benefit from each approach.

The conference aims for a better understanding of the benefits and risks of active surveillance and other observational management strategies. All are welcome to attend. Sign language interpreters will be provided. Those who need other reasonable accommodation to participate should contact Elizabeth Neilson at NeilsonE@mail.nih.gov.

Goosby To Give Barmes Global Health Lecture, Dec. 13 in Masur

By Valerie Lambros

The Department of State's U.S. global AIDS coordinator Dr. Eric Goosby will present the 2011 David E. Barmes Global Health Lecture, an annual event cosponsored by the National Institute of Dental and Craniofacial Research and the Fogarty International Center, on Tuesday, Dec. 13 at 11 a.m. in Masur Auditorium, Bldg. 10.

His lecture, titled, "PEPFAR: Moving from Science to Program to Save Lives," will highlight the work done through the President's Emergency Plan for AIDS Relief (PEPFAR), a program launched 8 years ago that Goosby currently oversees as ambassador.

Just last year, PEPFAR joined NIH and HRSA to partner in a 5-year, $130 million plan to improve training for researchers and health care workers, in short supply across sub-Saharan Africa. The effort, called the Medical Education Partnership Initiative (MEPI), is administered by Fogarty and HRSA with funding from PEPFAR, the NIH Common Fund and 17 ICs. MEPI participants in a dozen countries are forming a network to leverage resources and share information. The initiative's goal is to increase expertise not only in HIV/AIDS, but also in chronic, non-communicable conditions such as cardiovascular disease and cancer, which are growing concerns in the region.

Goosby said the partnership is critical to develop the level of "sustained intellectual honesty" necessary for clinical as well as scientific work, both "essential to improving the quality of care."

NIH director Dr. Francis Collins said he is pleased that NIH's contribution to PEPFAR in sub-Saharan Africa is enduring.

"If we don't have the talented individuals who are going to roll up their sleeves and carry out this work, we aren't going to accomplish very much," he added.

Goosby also manages the federal government's participation in the Global Fund to Fight AIDS, Tuberculosis and Malaria and serves on the operations committee that leads the Global Health Initiative.

His work in fighting HIV and AIDS is well-known worldwide, but also closer to home. NIAID director Dr. Anthony Fauci, whose own scientific career has also focused on combatting HIV and AIDS, said, "For three decades, Dr. Goosby has been a shining light in the domestic and global arena of HIV/AIDS. From the early days in the 1980s taking care of patients in San Francisco to his leadership roles in several administrations, Dr. Goosby has commanded and continues to command the respect and admiration of scientists, public health officials and constituents involved in the struggle against HIV/AIDS."

Dr. Eric Goosby

Goosby has been a pioneer in the fight against AIDS since the earliest days of the epidemic. As a young doctor, he was among the first to treat people with HIV at San Francisco General Hospital, where he helped integrate HIV treatment programs with methadone clinics. Despite the agony Goosby witnessed in San Francisco—one of the early epicenters for the virus—the city holds a special place in his heart. Goosby earned his M.D. from the University of California, San Francisco, and later taught as a professor at the school, passing on the hard-won lessons he had learned in the clinic.

After seeing the desperation of patients and the struggles of the scientific community to address the steadily exploding public health issue, Goosby moved to Washington in 1991 to become first director of the Ryan White program, the nation's domestic HIV care and support initiative. Next, he became director of HIV/AIDS policy for the Department of Health and Human Services and served in various capacities in the Clinton White House's National AIDS Policy Office, where he helped establish the Minority AIDS Initiative—a program that continues to help communities across the country.

Upon leaving that government position, Goosby served as CEO of the Pangaea Global AIDS Foundation, which works with governments around the world to establish their own sustainable HIV treatment programs. He has played a key role in the development and implementation of HIV/AIDS national treatment scale-up plans in South Africa, Rwanda, China and Ukraine.

The annual lecture honors the late David Edward Barmes, who was a special expert for international health at NIDCR and a longstanding World Health Organization employee. The lecture series was established in 2001 to honor his lifelong dedication to research aimed at improving health for those in low-income countries.

HHS*innovates* Accepting Nominations through Dec. 30

Calling all NIH innovators. Win up to $2,500 and have a chance to showcase your innovative idea by entering the HHS*innovates* competition. Round 4 of HHS*innovates* will close on Friday, Dec. 30. Go to http://intranet.hhs.gov/hhsinnovates to learn more about the competition and to nominate your innovation.

There are many reasons to participate, including:

- The opportunity to have a positive impact agency-wide by fostering innovation within HHS;
- A chance to be recognized for your ideas by Secretary Sebelius at HHS headquarters; and
- Cash awards of up to $2,500 per person for three of the winning teams.

Applicants can nominate innovations that made improvements to communication, workforce development, sustainability and other areas.

Work with your supervisor to consider whether a proposal is eligible for entry. You may also consult with Ryan Bayha (bayhar@mail.nih.gov) in the NIH Office of Science Policy, who is NIH liaison to the HHS*innovates* awards committee.

ger science fiction, but reality," said Mikos, who holds 25 patents and has worked on biomaterials in a wide range of tissues.

There is burgeoning worldwide interest in developing replacements for human tissue types—"every single one of them"—said Mikos, who specializes in orthopedic applications. He said that laboratories are investigating ophthalmic, neurologic, cardiovascular, musculoskeletal and skin tissues, among others.

Because some of the demand for tissue engineering has been driven by war injuries, the Department of Defense has created the Armed Forces Institute of Regenerative Medicine, which has supported one of Mikos's projects for the past 4 years.

The paradigm currently being pursued by the field has three parts, Mikos explained: biomaterials, which include both natural and synthetic polymers, as well as ceramics and metals; drugs, which can stimulate the growth of desired populations of cell types; and cells, which can be engineered to promote tissue growth.

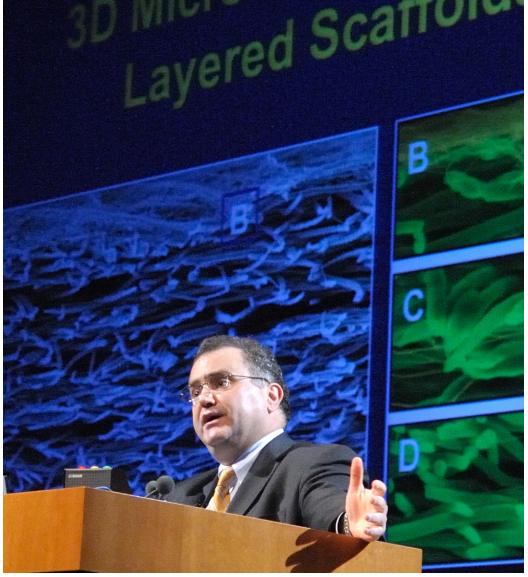
In the latter category, the main focus nowadays is on stem, or progenitor, cells, said Mikos; earlier work had focused on so-called "committed" cells. Defining the roles of different cell populations in tissue engineering remains a major challenge, he added.

Scientists are building 3-D polymer scaffolds and cell-scaffold constructs where details such as pore architecture can modulate cell fate, Mikos explained. Almost all of the work he described relies on animal models: stem cells transplanted into rats have prompted bone growth; bone engineering in the ribs of sheep has progressed, with the goal of creating vascularized bone tissue; and bone tissue induction into nano-composite scaffolds has been shown in the leg bones of rabbits.

"The biggest challenge in biomaterials," Mikos said, "is the evaluation and validation [of tissue engineering] in relevant animal models."

A special challenge in bone work is literal hardness—the material must be capable of bearing loads. Researchers are crafting carbon nanotube composites that are comparable to human bone, Mikos said.

Another problem is the dispersion of nanomaterials within a scaffold. Scientists are using various chemical techniques to overcome that difficulty, Mikos said.



***Right**:*
Mikos said there is burgeoning worldwide interest in developing replacements for human tissue types—"every single one of them."

PHOTOS: MICHAEL SPENCER

Researchers must also determine what happens to non-degradable materials once they are introduced into bodies. "Are they excreted? Integrated? Or could they migrate and do harm?" Mikos asked.

Interestingly, some tissue engineering, in addition to providing structural and biological benefit, also happens to improve cellular imaging, using magnetic resonance and computed tomography, Mikos said. "Three-dimensional tissue imaging in a non-destructive way is allowing insight into osteogenesis and angiogenesis."

Of particular interest to his lab in the past 7 years have been improvements in bioreactor technology, which had traditionally been used to expand populations of specific cell types. The so-called "flow perfusion bioreactor" can be used to generate an extracellular matrix that is rich in signaling molecules, Mikos said. Such matrices can convert an inert material such as titanium into a "bioreactive" body component.

Mikos surveyed a host of other promising research avenues: using "biomimetic hydrogels" to guide bone regeneration in dental applications; and using "particulate polymer carriers" to deliver bioactive molecules.

"Dose is a very important parameter" in these instances, he cautioned, "plus a knowledge of release kinetics."

Of special interest to those with aching, aging knees, Mikos said that genetically modified cells may one day be able to regenerate bone, and that injectable cellular constructs and growth-factor carriers may soon prompt restoration of cartilage.

If people can just hold out long enough, the science Mikos described may one day be able to maintain our sagging spaces, rebuild our shaky joints, fill in any skeletal absences and get us all back out on the battlefield of life.

Amos Cuts Through Smoke at Trent Lecture

By Ray MacDougall

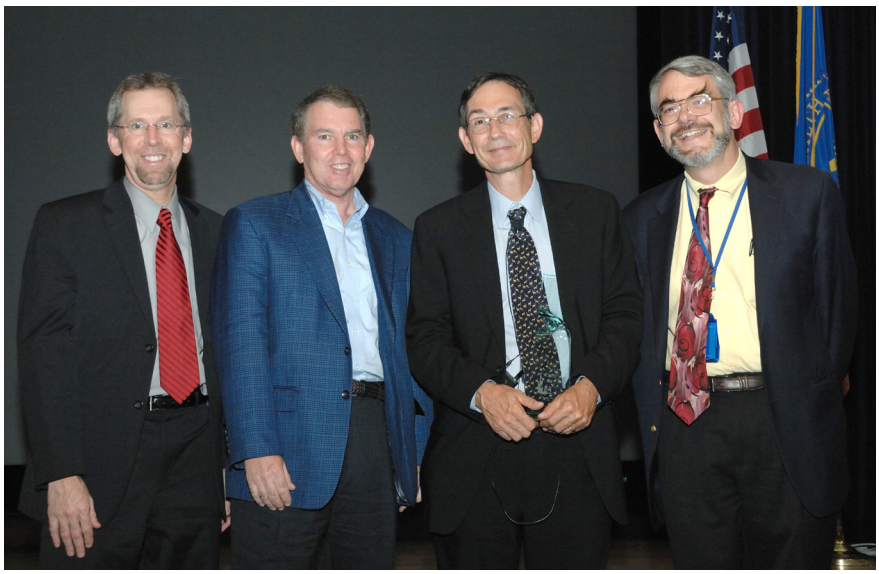
Though difficult to imagine today, the knowledge of lung cancer risk from exposure to tobacco didn't evolve until after World War II—a period when U.S. military rations included cigarettes. Soon after, scientists began to pick up the trail of killer tobacco with epidemiologic studies, comparing groups of smokers and non-smokers. They noted that individual susceptibility appeared to be a factor in cancer and addiction and, in the 1980s, produced the first evidence linking genetic factors to human lung cancer risk.

Dr. Christopher Amos, professor of epidemiology and biomathematics at the University of Texas MD Anderson Cancer Center, recently described the evolution of our current understanding of the complex genetic and environmental relationship between smoking tobacco and lung cancer risk. His talk was the 9th annual Jeffery M. Trent Lecture, organized by NHGRI. Amos leads the coordinating center for a collaborative group called the Genetic Epidemiology of Lung Cancer Consortium.

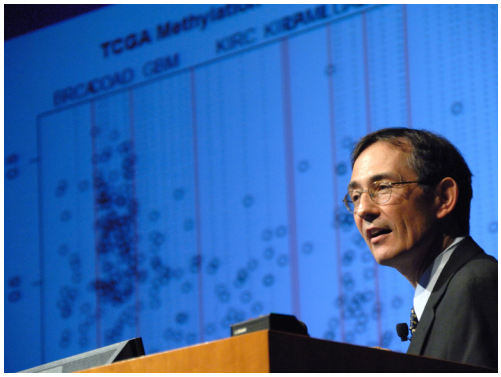
Researchers such as Amos classify a smoker as a person who lights up 100 or more times. Citing the work of Laura Beirut at Washington University in St. Louis, Amos said that, among people who have smoked more than 100 cigarettes, 80 percent develop a tobacco dependency while 20 percent do not.

Research in this area has advanced over recent decades. Initial studies in the early 1960s identified an increased risk for lung cancer among relatives of lung cancer patients, but these were not confirmed until the 1980s, when researchers presented evidence linking genetic factors to lung cancer risk. The first genetic epidemiologic study on lung cancer considered individual risk rather than classifying the population as a vast group. Then, in 1986, NHGRI senior investigator Dr. Joan Bailey-Wilson and collaborators showed that lung cancer was more prevalent in some families even after adjusting for cigarette smoking.

In 1990, Bailey-Wilson's group found statistical evidence that a specific genetic factor increases a person's risk of lung cancer. In 2004, her team, including Amos and other members of the Genetic Epidemiology Consortium, identified the first region in the human genome that increases lung cancer risk. In 2008, Amos led a group that identified common risk alleles for lung cancer on chromosome 15q, which has led to many other studies of both lung cancer risk and nicotine dependence genes in this chromosomal region. Alleles are the alternate gene forms an individual inherits from each parent that, in this case, put them at higher risk for lung cancer.



On hand at the Trent Lecture were (from l) NHGRI director Dr. Eric Green; lecture namesake and former NHGRI scientific director Dr. Jeffrey Trent; speaker Dr. Christopher Amos and NHGRI scientific director Dr. Daniel Kastner.



At right, Amos described genetic susceptibility to lung cancer.

PHOTOS: BILL BRANSON

Researchers in Amos's field of genetic epidemiology continue to gain understanding of lung cancer and the ongoing public health concern it presents. Using linkage analysis—tracking a trait in families and linking genetic factors to the trait—they can find high-risk alleles. By performing large genome-wide association studies that scan many different individuals' genomes for a genetic marker that can predict disease, they can find common, low-risk alleles. A person with multiple risk alleles in different disease genes has a higher probability of developing cancer.

The outcomes of these analyses are shedding light on the relationship between smoking and lung cancer. For example, we now understand that relatives of lung cancer patients—who are also smokers—have a 2.5 percent higher risk of lung cancer. And, people with rare mutations in the p53 gene have been shown to have a higher risk of lung cancer along with higher risks for breast cancer, sarcomas, leukemias and other cancers.

Amos described an increasing sophistication in the questions that researchers are asking and showed that these questions are leading to answers—and more questions. For instance, they have found that African-American males who smoke the same amount as Caucasian males have a 30 percent higher risk for lung cancer. Hispanic groups have a lower risk than Caucasians. Amos explained that complex genetic and environmental factors may contribute to these differences.

The future of lung cancer research lies in trans-disciplinary groups that can approach questions of the genetics of lung cancer risk and smoking from different directions, Amos said. Among his goals is screening high-risk populations for their risk for lung cancer to help them make important life choices, especially to avoid smoking.

CLINTON

CONTINUED FROM PAGE 1

***Above**:*
Clinton, shown here meeting long-time friends NIAID director Dr. Anthony Fauci (l) and NIH director Dr. Francis Collins, says science has a major role to play in defeating HIV/AIDS: "If we are going to make the most of this moment, there are steps we must take together. First, we need to let science guide our efforts."

***Below**:*
Clinton is greeted at the Clinical Center's south entrance lobby by (from l) CC director Dr. John Gallin, NIDA director Dr. Nora Volkow, NCI director Dr. Harold Varmus, Fauci and Collins.

PHOTOS: BILL BRANSON, ERNIE BRANSON

the international conference "AIDS 2012" that will be held in Washington, D.C., next June.

Warm Reception, Regard

On arrival, Clinton was greeted by NIH director Dr. Francis Collins, along with NIAID director Dr. Anthony Fauci, Clinical Center director Dr. John Gallin, NCI director Dr. Harold Varmus and NIDA director Dr. Nora Volkow.

Fauci, in opening remarks, recalled Clinton's long history of support for NIH. He remembered her February 1994 visit to the Clinical Center as First Lady. Her tour included several patient care units for people infected with HIV.

"Her interest in and commitment to this critical public health issue were keen then and remain so today," Fauci said. "The relationship continues in her current position as Secretary of State, where her strong and compassionate leadership in the arena of global health and her support for the role of biomedical research in this endeavor are greatly appreciated. She has been a wonderful friend throughout the years."

Introducing the Secretary of State, Collins said that in his own 20-year acquaintance with Clinton, he has always appreciated her strong voice on any number of biomedical science topics, including his field of genome research.

"In matters of global health," he noted, "she is a champion of making decisions based on evidence…Her insights have always been far-ranging and thought-provoking. I know our horizons will be widened today by what Madame Secretary has to say about the HIV/AIDS pandemic and about how we might work together…to end this deadly scourge once and for all."

The Masur Auditorium audience welcomed Clinton with an extended standing ovation.

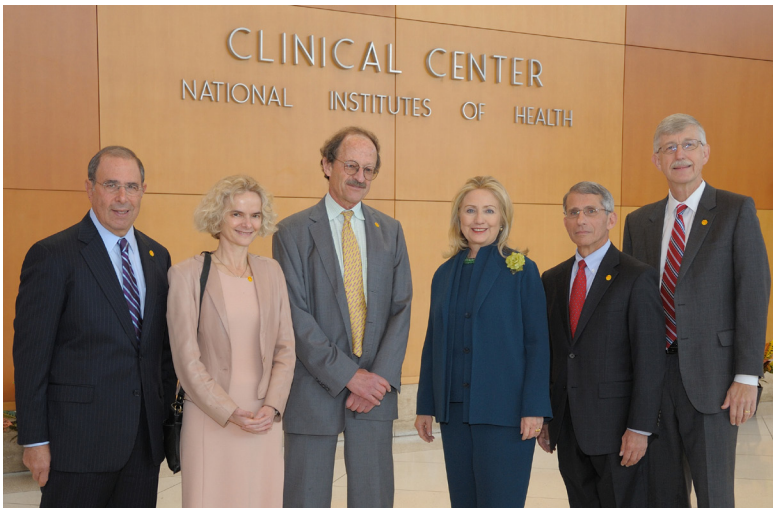
"For me this is a special treat," Clinton said, "because here in this room are some of America's best scientists and most passionate advocates—true global heroes and heroines—in an institution that is on the front lines of the fight against HIV/AIDS."

Nod to Good Work by Government

Clinton spent a few moments reflecting on how far the world has come since June 1981, when a mysterious new disease was first being reported. She talked also about the many successful discoveries as well as other scientific developments and policies—led and funded by the federal government—to fight AIDS over the past 30 years.

"Let's remind ourselves no institution in the world has done more than the United States government," she pointed out. "We have produced a track record of excellence in science…I want the American people to understand the irreplaceable role the United States has played in the fight against HIV/AIDS. It is their tax dollars—our tax dollars—that have made this possible."

She acknowledged that the U.S. has made such a huge difference with help from such partners as other governments, private organizations and particularly by teaming up with groups led by people living with HIV/AIDS.



Above, Clinton talks about an AIDS-free generation within our grasp, as Fauci and Collins applaud.

However, she said, continuing to stress the federal government's role, "the world could not have come this far without us and it will not defeat AIDS without us...Our efforts have helped set the stage...to change the course of this pandemic and to usher in an AIDS-free generation."

Three Keys to AIDS-Free

Clinton defined an AIDS-free generation as one in which "virtually no children are born with the virus." Then, as these children grow into their teen years and adulthood, they are at "far lower risk of becoming infected than they would be today," and finally, "if they do acquire HIV, they have access to treatment that prevents them from developing AIDS and passing the virus on to others."

She outlined three key strategies to create such a generation:

- End mother-to-child transmissions,
- Expand voluntary medical male circumcision,
- Scale up treatment for people already living with HIV/AIDS.

Fauci and Collins chat with the Secretary of State en route to Masur Auditorium.

"Now let me be clear," she said. "None of the interventions I've described can create an AIDS-free generation by itself. But used in combination with each other and with other powerful prevention methods, they do present an extraordinary opportunity."

Stand for Science, Evidence

Clinton offered another hearty endorsement for research and science in general. "If we are going to make the most of this moment," she said, "there are steps we must take together. First, we need to let science guide our efforts. Success depends on deploying our tools based on the best available evidence.

"Now, I know that occasionally it feels in and around Washington that there are some who wish us to live in an evidence-free zone," she quipped, drawing laughter and applause. "But it's imperative that we stand up for evidence and for science. Facts are stubborn things, and we need to keep putting them out there... Eventually we will prevail."

'Smartest Investment'

Closing her 20-minute address, she said despite tough financial conditions, our nation's wisest course of action has always been—and will always be—to look out for our children and grandchildren who will live long after we do.

"In these difficult budget times, we have to remember that investing in our future is the smartest investment we can make," she said. "Generations of American policymakers and taxpayers have supported NIH, medical research, scientific work—not because we thought everything was going to produce an immediate result, but because we believe that through these investments, human progress would steadily, steadily continue. Let's not stop now."

Portrait of Luke Wilson Sought

The man in this portrait may resemble Mark Twain, but he is actually Luke W. Wilson, son of Luke I. and Helen Woodward Wilson, who donated the original land on which NIH now stands. The portrait, painted more than 20 years ago by Xavier Gonzalez, was donated to NIH by Luke W. Wilson's family. It was to have resided in Wilson Hall, Bldg. 1, along with his parents' portraits.

Have you seen this gentleman? This portrait of Luke W. Wilson has gone missing. Reward offered if it can be recovered.

This painting is missing. After it was given to NIH in 1990, the portrait disappeared. In spite of extensive searches through the archives of the National Library of Medicine, the NIH Office of History and the attic of Bldg. 1, it has yet to be found.

We are publishing the image here in the hope that someone may have seen the painting and will report its whereabouts. NIH and the Wilson family await news of its discovery. The person who helps recover the painting will have the opportunity to meet the Wilson grandchildren and participate in a proper unveiling of the portrait in its rightful place. Contact Dr. Richard Wyatt, Office of Intramural Research, if you have information that might assist NIH in finding the painting.

ACCESSIBILITY

CONTINUED FROM PAGE 1

require," said Dr. Lawrence Tabak, NIH principal deputy director, in opening remarks.

As technology rapidly changes, NIH and other federal agencies strive to adopt the assistive technologies (ATs) required by the public. Such a task is not without difficulties. Tabak harkened back to September 2001 when the NIH 508 working group was first formed and many of the products on the market weren't designed with accessibility in mind. But NIH has come a long way and HHS reports indicate that NIH is one of the leading agencies, with more than 80 percent of web pages compliant with 508 standards. Further, each IC has a specified 508 officer and both NIH and HHS have a wealth of in-person and online training for making material fully accessible.

"This represents thousands upon thousands of people working to get to this point, and it will continue to take some of that effort to keep this moving forward," said Tabak. "With continued dedication we can ensure that we continue to turn discovery into health. Not just for a few people but for everyone."

Keynote speaker and relationship manager at the Center for Information Technology Teresa Shea knows firsthand what it's like to be one of the many Americans in need of AT. After a diagnosis of retinal ischemia at age 24, she struggled to find the resources and training she needed and to re-master even simple tasks and to return to the professional workplace.

"I do not have the constitution to be holding onto someone else's arm for the rest of my life," said Shea.

Despite a strong résumé, skill set and blind training, Shea faced difficulties finding employment as a blind professional. "Everyone who has a disability knows, it's a constant struggle to prove your ability," she said.

When she was hired at NIH, Shea imagined an ideal world of accessibility. It wasn't quite the picture of perfection she expected, but that gave her the opportunity to dive in and be a part of efforts to make needed improvements.

She has taken an active role in promoting disability awareness, including holding a position on the Equal Opportunity Employment Program committee and spearheading "3 Blind Mice," a resource-sharing group for the blind/low-vision, with two NIH coworkers. The mission of 3 Blind Mice is to provide fundamental knowledge about the needs of the blind/low-vision community within NIH and strengthen the overall quality of accessibility, training and awareness throughout the workplace.

Right, top:
Shea has taken an active role in promoting disability awareness, including helping start 3 Blind Mice, a resource-sharing group.

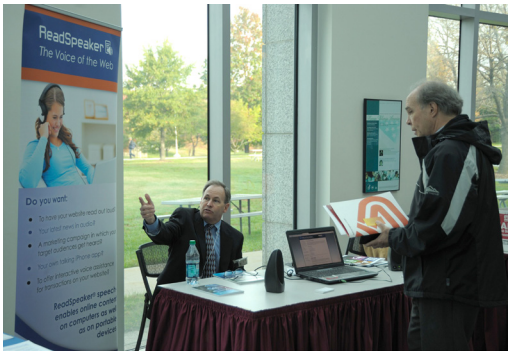
Right, below:
Bruce Bailey, an accessibility IT specialist at the U.S. Access Board, was among the event's speakers.

PHOTOS: BILL BRANSON

"I'm doing my part to grow awareness and continue that change that was started 10 years ago," said Shea, "transforming the NIH into a more inclusive workplace and highlighting the sheer determination, drive and professionalism of those with disabilities at NIH."

The program also included a panel discussion with Bruce Bailey, an accessibility IT specialist at the U.S. Access Board; Angela Hooker, a senior accessibility specialist for Cascades Technologies, Inc.; Mat McCollough, executive director of the D.C. Developmental Disabilities Council; and Jonathan Lazar, a professor of computer and information sciences at Towson University. Lazar urged NIH, and all federal agencies, to be open and transparent when it comes to technology access and 508 compliance. "If you don't talk about it, the public perceives it as you aren't doing anything," he said.

Other topics included accessibility in the private sector, problems with electronic forms, the importance of getting qualified individuals with disabilities into the workforce to effect change



Etienne Lamoreaux (r) of NIAAA visits an exhibitor's booth at the disability awareness event.

and the need for accessible medical diagnostic equipment.

The need to share responsibilities in accessibility was also a highlight, expanding Tabak's earlier thoughts on making accessibility a part of standard operating procedures. "So often we rely on one person to be an accessibility champion at our agency, but I want us to start thinking about making accessibility a part of everyone's responsibility. If everyone has an accessibility role in the project, I guarantee that we'll see a different outcome," said Hooker.

Attendees were also free to browse an assortment of booths presenting ATs and other resources.

The program ended with a presentation by Joel Snyder, president of Audio Description Associates and director of the Audio Description Project for the American Council of the Blind. His presentation was timely, as October 2011 marked the 1-year anniversary of President Obama signing into law a mandate for audio description in broadcast television.

A master of description, Snyder painted pictures with words for the audience, clearly illustrating how audio description enhances the experience of a movie scene, a comic's performance, or even a speech, whether the audience is blind, has low vision or is not visually impaired at all.

"In this country, the principal constituency for audio description has an unemployment rate of about 70 percent," he said. "I am certain that with more meaningful access to our culture and its resources, people become more involved, more engaged with society and they become more engaging individuals and thus more employable. There's no reason why a person with a visual disability must also be culturally disadvantaged."

NINDS student intern Karishma Popli shakes hands with President Obama at the America Invents Act signing.

NINDS Student Intern Meets the President

By Vanessa Mahone

When President Barack Obama signed the America Invents Act recently, NINDS student intern Karishma Popli had a front row seat. In fact, she was selected to stand next to President Obama on stage as he signed the new patent reform law at her school, Thomas Jefferson High School for Science and Technology in Alexandria, Va.

Popli was selected by the White House after demonstrating potential as an innovative social entrepreneur by combining technology and education in two grant competitions at Jefferson High. Her grant-winning social responsibility project, Lighting the Future with Technology!, provided solar lamps to rural, underdeveloped schools in India and Africa. It also educated more than 2,000 students about the importance of harnessing the power of the sun in order to study at night in areas where there is no access to electricity.

Popli's NINDS internship is part of the ORWH-NIH-FAES Summer Research Program for high school students and operates in cooperation with her school's mentorship program. At NINDS she works in the Medical Neurology Branch on GABA spectroscopy in Tourette syndrome.

This past summer, Popli looked at GABA—a neurotransmitter in the brain—and found that people with Tourette syndrome had decreased levels of GABA in the sensorimotor cortex of their brains compared to healthy volunteers. This discovery could explain the excitation/inhibition imbalance that causes involuntary outbursts or loss of movement control and may lead to the development of potential drug therapies for people with Tourette. Findings may be published in a scientific journal.

Popli's mentors in the human motor control section are section chief Dr. Mark Hallett, staff scientist Dr. Silvina Horovitz and clinical fellows Drs. Beth Belluscio and Sule Tinaz. Popli will continue her internship, which began in June, through January 2012.

"The experience of working with such incredible doctors has inspired me to pursue further studies in neuroscience to hopefully become a neurologist in the future," Popli said. "The exposure to research and patient clinics has been fascinating and rewarding."

digest

Children with autism have more brain cells and heavier brains compared to typically developing children, according to researchers partly funded by NIH.

Brain Growth Problems Linked to Autism

Children with autism have more brain cells and heavier brains compared to typically developing children, according to researchers partly funded by NIH. Published in the *Journal of the American Medical Association* on Nov. 9, the small, preliminary study provides direct evidence for possible prenatal causes of autism.

"Earlier studies of head circumference and early brain overgrowth have pointed us in this direction, but there have been few quantitative neuroanatomical studies due to the lack of post-mortem tissue from children with autism," said NIMH director Dr. Thomas Insel. "These new results, along with an earlier study reporting altered wiring of the prefrontal cortex, focus our attention on this critical area of the brain in autism."

The prefrontal cortex is involved in various higher order functions such as language and communication, social behavior, mood and attention. Children who have autism tend to show deficits in such functions. The researchers found that children with autism had 67 percent more neurons in the prefrontal cortex and heavier brains for their age compared to typically developing children.

Painkiller Abuse Treated by Drug Combination

People addicted to prescription painkillers reduce their opioid abuse when given sustained treatment with the medication buprenorphine plus naloxone (Suboxone), according to research published in the Nov. 7 issue of *Archives of General Psychiatry* and conducted by the National Institute on Drug Abuse. The study, which was the first randomized large-scale clinical trial using a medication for the treatment of prescription opioid abuse, also showed that the addition of intensive opioid dependence counseling provided no added benefit.

"The study suggests that patients addicted to prescription opioid painkillers can be effectively treated in primary care settings using Suboxone," said NIDA director Dr. Nora Volkow. "However, once the medication was discontinued, patients had a high rate of relapse—so, more research is needed to determine how to sustain recovery among patients addicted to opioid medications."

Pain medications are beneficial when used as prescribed, but they have significant abuse liability, especially when taken for non-medical reasons. An estimated 1.9 million people in the United States meet abuse or dependence criteria for prescription pain relievers. In addition, the Centers for Disease Control and Prevention report that annually, more people die from prescription painkiller overdoses than from heroin and cocaine combined.

Stroke Risk Factors May Lead to Cognitive Problems

High blood pressure and other known risk factors for stroke also increase the risk of developing cognitive problems, even among people who have never had a stroke, a study funded by NIH has found.

"Our results emphasize the importance of early intervention to treat high blood pressure and preserve cognitive health prior to a stroke or other cerebral event," said first author Dr. Frederick Unverzagt, a professor of psychiatry at Indiana University School of Medicine in Indianapolis. The study appeared in the Nov. 8 issue of *Neurology*.

The new findings come from the REasons for Geographic and Racial Differences in Stroke (REGARDS) study, an effort to track stroke risk and cognitive health in an ethnically and demographically diverse sample of the U.S. population 45 and older. Since 2003, the study has followed more than 30,000 people. The study is funded by the National Institute of Neurological Disorders and Stroke.

"A strength of this study is that it looked at people who were cognitively healthy at the start and reassessed their cognitive function periodically to see who developed problems over time," said NINDS deputy director Dr. Walter Koroshetz. "This allowed the investigators to explore whether certain risk factors were predictive of, rather than just correlated with, cognitive impairment."

Light Therapy Destroys Cancer Cells in Mice

Researchers have designed a light-based therapy that allows the selective destruction of tumor cells in mice without harming surrounding normal tissue. This method of cancer therapy could theoretically work against tumors in humans, such as those of the breast, lung, prostate, as well as cancer cells in the blood such as leukemias, say scientists from the National Cancer Institute. The study appeared online Nov. 6 in *Nature Medicine*.

Current photodynamic therapy is not specific for cancer cells, resulting in damage to surrounding normal tissue. Researchers in this study set out to develop a light therapy that could more accurately target cancer cells while sparing a greater number of normal cells. The new treatment, called photoimmunotherapy, or PIT, uses light to rapidly and selectively kill cancer cells.

At ExLP's recent graduation ceremony are (from l) Dr. Alan Willard (NINDS), NIH principal deputy director Dr. Lawrence Tabak (OD), Dr. Bruce Androphy (NIEHS), Dr. Susana Serrate-Sztein (NIAMS), Stacy Charland (OD), Dr. Sheryl Brining (NCRR), Tim Wheeles (NHLBI), Dr. Chyren Hunter (NIA), Dr. Debbie Winn (NCI), Jenny Czajkowski (CIT), Dr. Pamela Collins (NIMH), Gary Mays (NIAID), Dr. Daniel Gallahan (NCI), Dr. Cheryl Boyce (NIDA), Dr. Kenton Swartz (NINDS), Dr. Pamela Starke-Reed (NIDDK), Dr. David Bluemke (CC), Sheila Stokes (OD), Keith Lamirande (NIAAA), Dr. Joni Rutter (NIA). Not shown is Dr. Germaine Buck Louis (NICHD).

Executive Leadership Program Graduates Second Cohort

The 2011 NIH Executive Leadership Program (ExLP) came to a close recently and culminated with a reception at Bldg. 60. Recruitment is now under way for the 2012 program.

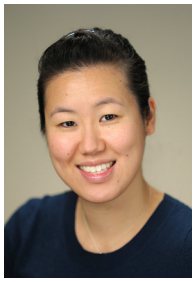
ExLP participants completed a variety of projects and shared recommendations on how best to approach four critical challenges affecting NIH including property management, management of NIH policies and procedures, diversity within the intramural program and engaging IT to accelerate data sharing, scientific discovery and translation.

NIH principal deputy director Dr. Lawrence Tabak provided inspirational remarks to participants, inviting them to use everything they learned and to continue to collaborate with each other.

"Be glad you're prepared," he said. "I can almost guarantee that you will need to use what you've learned in this program in a tangible way in the next few months. If you do three things, your ExLP training will always stay fresh in your mind: contribute, connect, communicate."

To learn more about the ExLP, or to get a program application, visit http://trainingcenter.nih.gov/ExLP.html. If you have questions about the ExLP, contact Keisha Berkley at (301) 496-6211 or berkleyk@mail.nih.gov.

PRAT Fellows Win Honors



Four NIH postdocs in the Pharmacology Research Associate (PRAT) Program recently received honors for their work. PRAT fellows conduct pharmacology research in an NIH or FDA lab. Shown are (clockwise, from top left): Amber Begtrup, who is receiving the American Society of Hematology Abstract Achievement Award and will present at the 53rd ASH annual meeting in San Diego Dec. 10-13. Dylan Burnette has been selected by the American Society for Cell Biology as winner of the Merton Bernfield Memorial Award and is invited to speak in an annual meeting mini-symposium. Kristina Lu has been selected as a top 10 finalist in the MedImmune RIA Abstract Competition, a national open competition advertised in Nature Immunology. *Samuel Hasson spoke at this year's NIH Research Festival on "Functional and Chemical Genomic Approaches to Study the Mechanisms of Mitochondrial Quality Control Linked to Neurodegenerative Disease." More information on the PRAT program is available at www.nigms.nih.gov/Training/PRAT; applications for next year's class are due Jan. 27, 2012.*

volunteers

Research Study Volunteers Needed

Do you drink alcohol? Drink daily or almost daily? Are you between the ages of 21 and 60? NIAAA is seeking men and women to study whether a medication for smoking cessation (Chantix) may affect drinking. Volunteers should be healthy and drug-free. Qualified subjects will be reimbursed for their participation. The study lasts 9 weeks and requires 5 outpatient visits and one overnight visit at the Clinical Center. For more details, call (301) 496-7500. Refer to study 08-AA-0137.

Women Needed for Study of Cortisol-Blocking Med

NICHD is looking for women ages 45 to 70 who have had menopause, are overweight, have abnormal glucose and triglyceride (form of bad" cholesterol) levels and are not on any estrogen-containing hormone therapy. After an initial screening visit for general health assessment, participants will undergo treatment with a cortisol-blocking medication (mifepristone) or a non-active pill (placebo) for 7 days. Each participant will take both study agents with a gap of 6 to 8 weeks between the two. Testing before and after treatment with the study medications will include blood-drawing over 24 hours, urine collection and intravenous glucose tolerance test and 1- to 2-day overnight inpatient stay. Compensation will be provided. For more information, call 1-800-411-1222 (TTY 1-866-411-1010) and refer to study 11-CH-0208.

Study of Effects of Exercise on Cortisol

NICHD is looking for men ages 18-30 who run more than 28 miles a week or exercise for less than 1 hour a week. Participants will provide urine, saliva and blood samples as outpatients. Participants will take study medications on 4 afternoons and come for additional testing. Healthy normal weight men are encouraged to call 1-800-411-1222 (TTY 1-866-411-1010) and refer to study 11-CH-0078. Compensation is provided for a completed study.

Women's Health Studies Seek Healthy Volunteers

Healthy women ages 45-65 are invited to participate in outpatient research studies. Compensation is provided. Call (301) 496-9576 and refer to protocol 88-M-0131.

NIH, Surgeon General Launch Go4Life Campaign

Exercise and physical activity can help promote health and maintain independence, and this is as true for older people as it is for any age group. To encourage baby boomers—and their parents—to get active, NIH on Oct. 19 launched Go4Life, a national exercise and physical activity campaign for people age 50 and older. The effort is led by the National Institute on Aging, in concert with partners from across NIH, HHS and the private sector.

Go4Life was introduced during a Capitol Hill briefing that featured a presentation by NIA director Dr. Richard Hodes on aging research and the health benefits of exercise. The presentations ended with a lively exercise activity, demonstrated by seniors attending the session.

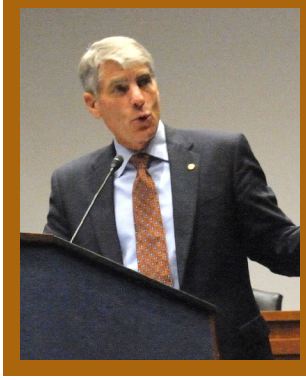
Sen. Herb Kohl (D-WI), chair of the Senate special committee on aging, and Sen. Mark Udall (D-CO) hosted the briefing.

With regular activity, "the challenge is how to get started," said Udall, a lifelong exerciser who includes daily workouts and mountain climbing in his regimen. "I look forward to being a partner in bringing fitness to older Americans," he said.

Participants in the briefing expressed dismay at the low rates of physical activity and exercise in the U.S. population, including older people. Despite proven health benefits, only 30 percent of people ages 45-64 say they engage in regular leisure-time physical activity. This falls to 25 percent for those ages 65-74 and to 11 percent among people 85 and older.

U.S. Surgeon General Regina Benjamin focused on the need to integrate health and wellness, not just the treatment of disease, into the U.S. health care model. A big part of that is physical activity and exercise. "This administration's National Prevention Strategy centers on a broad agenda to help Americans practice active living," she said. "Go4Life is a new tool to help make being healthy easy and fun for older people."

Hodes cited specific benefits of exercise for aging and reducing the risk of a number of chronic diseases. Findings from the Diabetes Prevention Program, for example, demonstrate that exercise, for the oldest group of participants, actually proved more effective than medication in preventing development of type 2 diabetes among people at risk. His message: "You're never too old to increase your level of physical activity. We want to reach out to older



Sen. Mark Udall (l) describes the importance of exercise for older people at the Go4Life launch. At right, speakers at the event included (from l) Colin Milner, International Association for Active Aging; Jim Whitehead, American College of Sports Medicine; Surgeon General Regina Benjamin; Dr. Chhanda Dutta, NIA Division of Geriatrics and Clinical Gerontology; Dr. Richard Hodes, NIA director; Robert Hornyak, Administration on Aging.

people who traditionally have not embraced exercise and show them how, even some with physical limitations, they may be able to exercise safely."

To do that, Go4Life brings together evidence-based resources on health and aging with a variety of agencies and organizations working with older adults in communities. It creates a national Go4Life Team to encourage older Americans to make exercise and physical activity part of their everyday lives.

NIA convened some of the nation's leading experts on aging, exercise and motivation to develop Go4Life. For more than 2 years, an NIA task force on exercise and physical activity was involved in all aspects of the project, beginning with development of *Exercise & Physical Activity: Your Everyday Guide from the National Institute on Aging*, the core resource for the campaign.

The center of Go4Life is an interactive web site (www.nia.nih.gov/Go4Life) with information for individuals, families and friends, organizations and health care professionals. It features specific exercises, success stories and free materials to motivate the growing numbers of older people to start exercising and keep going to improve their health and achieve a better quality of life.

So far, 11 federal agencies, including six ICs—NCCAM, NHLBI, NIAMS, NIDDK, NIMH and NINDS—are initial Go4Life Team members, along with 29 private and nonprofit organizations. The full list of current Go4Life Team members can be found at the Go4Life web site.

Trainer Sandy McGrath (l) leads older volunteers and event attendees in exercises that can be done anytime, anywhere.